ence in weight by 0.997. The 5 cc. graduated tubes were calibrated by means of a 5 cc. certified pipette.) By working rapidly it was possible to check the method of using 0.02 cc. with that using 0.1 cc. of blood, the former reading between 99 and 101% of the latter. We have found that the blood pipettes fill better if rinsed with distilled water and dried in an oven or by sucking air through, than by drying with alcohol and ether. This may be due to a film of adsorbed water on the pipettes rinsed last in water, or to a film of oil due to the alcohol and ether not being absolutely pure. The ferricyanide used as a color filter must be kept covered with an opaque box when not in use.

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Studies of Skin Protection to Ultraviolet Light by Previous Irradiations.

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The amount of radiation from a mercury quartz arc required to produce an erythema of a certain skin area of a certain individual is, as a rule, greater the more this area has been exposed to ultraviolet light of wavelength 240 to 310 mμ (the region responsible for the reaction) during the previous 2 months. Evidently some change has been produced in the skin by the first irradiation which makes it less sensitive to the following exposure. What change is responsible for this protection is not definitely known, but it has been shown that it is a local change extending over the exposed area and slightly beyond the margin. It has also been proven that it does not run parallel to the tanning which is another effect produced by certain ultraviolet light bands between 240 and 370 mμ.[1]

For treatments with ultraviolet light it is important to know when and to what extent such protection is produced. Some experiments along this line have been carried out by other investigators and we have attempted to check their measurements and to contribute some further details.[2]

[1] Uhlmann, E., *Strahlentherapie*, 1930, xxxv, 361.

[2] Schall, L., and Alius, H. J., *Strah.*, 1928, xxvii, 769. Linser, K., and Kropatch, A., *Strah.*, 1926, xxii, 514. Perthes, G., *Munchen Med. Wehschr.*, 1924, lxxi, 1301. Keller, P., *Strah.*, 1924, xvi,; 1928, xxviii, 152.

The development and the consequent progress of the protection varies in different individuals, but the general characteristics of the course seem to be the same for most persons. Some exceptions have been noticed and this fact must be kept in mind as such exceptions are apt to be more common among patients than among healthy individuals.

We have experimented with 3 healthy individuals and the main procedure has been to irradiate one fair-sized area and then to repeat the irradiation at different times to different parts of this region. A new Victor mercury arc lamp was used without any filter. The current was 4.5 amperes at 65 volts and the distance from burner to skin 30 inches.

Experiment I showed that protection was obtained after 7 days against 3 minutes on area originally irradiated 3 minutes and for 4 minutes or more on the same area on the following day. It is interesting to note that the protection was complete enough for 4 more minutes on the 8th day in addition to the 3 minute dose on the 7th day.

Experiment II showed protection after 7 days against 4 minutes on area originally irradiated 4 minutes.

Experiments III and IV showed protection after 6 days against 3 minutes on area originally irradiated 3 minutes.

The results so far obtained can be summed up as follows: (1) A difference in sensitivity to ultraviolet light was noticed on the same individual even on adjacent areas on the anterior surface of the thigh. (2) Two equal exposures produced more reaction when administered some hours or even days apart than when given in immediate succession. (3) An interval of 7 days between successive exposures resulted in protection in all 4 experiments, while an interval of 6 days proved adequate in 2 instances and inadequate in the remaining 2. (4) These observations are in fair agreement with previous works, but the quantitative aspect of the protection has been more clearly brought out.